New Hampshire Department of Transportation
Bureau of Materials & Research

Qualified Products List (QPL) – Qualification Criteria

Section 645 – Erosion Control, NHDOT Specifications

QPL Category: 645.Q. Item 645.612 - Fiber Reinforced Matrix (FRM)

Product Requirements

Product Description

A Fiber Reinforced Matrix (FRM) shall be a long term Hydraulic Erosion Control Product (HECP). The FRM shall be composed of long strand, crimped, interlocking, non-toxic, and thermally (heated for sterilization purposes) processed fibers (natural or synthetic). In addition, the FRM shall include performance enhancing additives, water insoluble cross-linked hydro-colloidal tackifiers, and activators. The FRM shall consist of prepackaged fibrous materials that perform without the field mixing of additives or components. An FRM shall not be composed of paper, cellulose fiber, or a mixture containing paper or cellulose.

Environmental Compliance

An FRM product shall comply with all New Hampshire Department of Environmental Services (NHDES) and United States Environmental Protection Agency (USEPA) regulations.

The link to the NHDES form "APPLICATION FOR PRODUCTS PROPOSED TO BE APPLIED TO LAND OR WATER" can be accessed here: http://www.des.nh.gov/organization/divisions/water/wmb/wqs/documents/nhdes-w-07-076.doc

Duration of Functionality

The product shall not bio-degrade in less than 12 months after application.

Required Performance

When the product is mixed with water and hydraulically applied as slurry, it shall:

- ✓ Not require a curing period;
- ✓ Dry to form a continuous, porous, absorbent, insoluble erosion resistant matrix and;
- ✓ Form a flexible and protective layer;
- ✓ Allow for rapid germination and accelerated plant growth, and;
- ✓ Not dissolve or disperse upon re-wetting, or form a water-resistant crust.

Laboratory Test Performance

Fiber Reinforced Matrix		
Property	**Test Method**	**Requirement**
C Factor	Large Scale Testing AASHTO ECP 17-01, NTPEP Evaluation of Erosion Control Products (ECP) and Sediment Retention Devices (SRD)	0.01 or Less
Percent Effectiveness	Large Scale Testing AASHTO ECP 17-01	99% minimum
Cure Time	Observed	2 hours or Less
Vegetation Establishment	ASTM D 7322	500% minimum

Required Submissions

Only complete product submittal packets will be considered for review.

QPL Product Submittal Form

The submitted form must be the current, on-line version of the form, and must be completely filled out. It can be accessed here: https://www.nh.gov/dot/org/projectdevelopment/materials/research/products.htm.

Letter of Compliance

A Notarized letter on the manufacturer's letterhead affirming the product meets all Department requirements described herein.

Environmental Compliance

Products containing PAM shall include NHDES documentation to the manufacture that the product has been approved for use.

Product Literature

All current product literature, including the technical data sheet and Safety Data Sheet (SDS), relevant to the product's use, limitations, material properties, storage, mixing, application/installation, and all precautions for the product, as applicable.

Laboratory Test Results

Product submittals without laboratory test documentation will not be reviewed.

Laboratory Testing

As part of the evaluation, the Department will obtain and review the required test results from the AASHTO National Transportation Product Evaluation Program (NTPEP). Visit www.ntpep.org for information about submitting products to this program

NTPEP Index and Bench-Scale Test Results

The Department requires NTPEP index and bench-scale test results for all new products and for approved QPL listed products due to expire (see "**QPL Expiration Date / Product Test Frequency**" section).

NTPEP Large-Scale Test Results

The Department requires NTPEP large-scale test results for all products. The large-scale test is typically performed one-time and is non-cyclical. Retesting will be required if significant changes are reported in the index or bench scale results. Products will not be qualified for performance levels that exceed those in the published product literature.

Product Performance Monitoring / Removal from QPL

Product field performance and the product's technical data will be monitored by the Department. If either fails to meet the criteria noted herein, the product will be immediately removed from the QPL without notice to the manufacturer.

Changes to Product Name, Manufacturer, or Formulation, of a Currently-Listed QPL Product

The Department's Product Evaluation Unit (PEU) shall be contacted immediately when a change to any of the following is made to a product currently listed in the QPL:

- Product Name
- Product Manufacturer
- Product Formulation

For a change in the product name and/or manufacturer, the product will remain in the QPL reflecting that change upon receipt of verification from the current or new manufacturer attesting the product formulation is unchanged. Verification shall consist of a letter signed by the manufacturer's representative.

For a change in product formulation, the PEU will determine whether:

1. The formulation change could adversely affect the product's required performance, whereupon, it will be subject to removal from the QPL; or,
2. The formulation change will not adversely affect the required performance of the product for its intended use; whereupon, the product will remain in the QPL.

If at any time it is determined that a product name, manufacturer, or formulation has changed without the required notification to the PEU, the product is subject to immediate removal from the QPL at the discretion of the Product Evaluation Unit. The product will not be re-listed in the QPL until the manufacturer provides the proper notification.

QPL Expiration Date / Product Test Frequency

Qualified products in this QPL section will be listed for 3 years from the date of the most current laboratory test result documentation. Based on this date, a corresponding expiration date will be assigned and will be shown in the QPL. For the product to be listed in the QPL past its assigned expiration date, the manufacturer/supplier shall submit new NTPEP test result documentation that verifies current qualification criteria conformance. The test result documentation shall be submitted with sufficient lead time prior to the expiration date to allow for the PEU's review. Products without current acceptable index and/or bench scale test result documentation will be removed from the QPL upon reaching the expiration date.

Product Marking and Labeling

The product label shall be marked with the information as required by the applicable specification(s). If a product was converted and/or relabeled from its original manufacturer, the product name on the packaging and all accompanying literature shall be that of the convertor or private label company.

Limitations

The Department continues to evaluate its qualification criteria as well as products that have been qualified against them, and reserves the right to revise the criteria and/or withdraw product qualification at any time for any reason without notice. Qualification of a product does not constitute an endorsement of the product, nor does it imply intent to purchase or specify the product.

Qualification Criteria Approved by:

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